



EU Type Examination Certificate No CH-MI003-14025-03

Applicant: **SOCOMEK**
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France

Requirements: Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (MID) and the instrument-specific annex V (MI-003);
Ordinance of 15 February 2006 on Measuring Instruments (SR 941.210) and Ordinance of the FDJP of 26 August 2015 on Electrical Energy Meters (SR 941.251)

Conformity standards: EN50470-1:2006, EN50470-3:2006 and TR50579:2012
The tests were supplemented with a susceptibility test against symmetrically-flowing currents in the frequency range 2 kHz to 150 kHz.

Type of instrument: **Three-phase static meter for active electrical energy**

Type designation: **DIRIS A14**

Accuracy class: C

Characteristics: Reference voltage U_n : 230 V
Reference current value I_{Ref} : 5 A
Limiting current value I_{max} : 6 A
Minimum current value I_{min} : 0.05 A
Reference frequency f_n : 50 Hz
Operating temperature range: -10 °C...+55 °C
Casing protection class: IP 51 (integrated in the switch cabinet)
Protection class of connections: IP 20
Protection class: Class II (indoor meter)

Certificate valid until: 20 July 2024

Notified body Conformity Evaluation Body METAS-Cert
No. 1259

3003 Berne-Wabern, 19 March 2018

Released by Gulian Couvreur, Head of sector
METAS-Cert



1 Name and type of instrument

Three-phase static meter for active electrical energy, transformer connected class index C for use in three phases, four wires system.

Type: DIRIS A14, 4 tariffs

2 Type description

2.1 Construction of the meter casing

The meter consists of three parts made of opaque thermoplastic material: the base comprising the system for mounting on a DIN 35 mm rail, the centre part incorporating the terminals and the printed circuits (resting on the base) and the cover comprising a transparent Plexiglas plate over the LCD display. The cover is attached to the centre part, which is screwed to the base. The terminal covers are sealed and VOID labels are adhered to the meter's sides and over the base, centre part and cover to ensure a high degree of security against tampering.

Another version consists of a panel mount meter with the same technical specifications.

2.2 Sensor, measurement value processing, energy display

- Measurement sensor

Adaptation of the measurement current to the level required by the module takes place using a shunt. Adaptation of the measurement voltage takes place using an ohmic resistor divider.

- Test output

The registered energy can be read out in the form of pulses via the standardized LED.

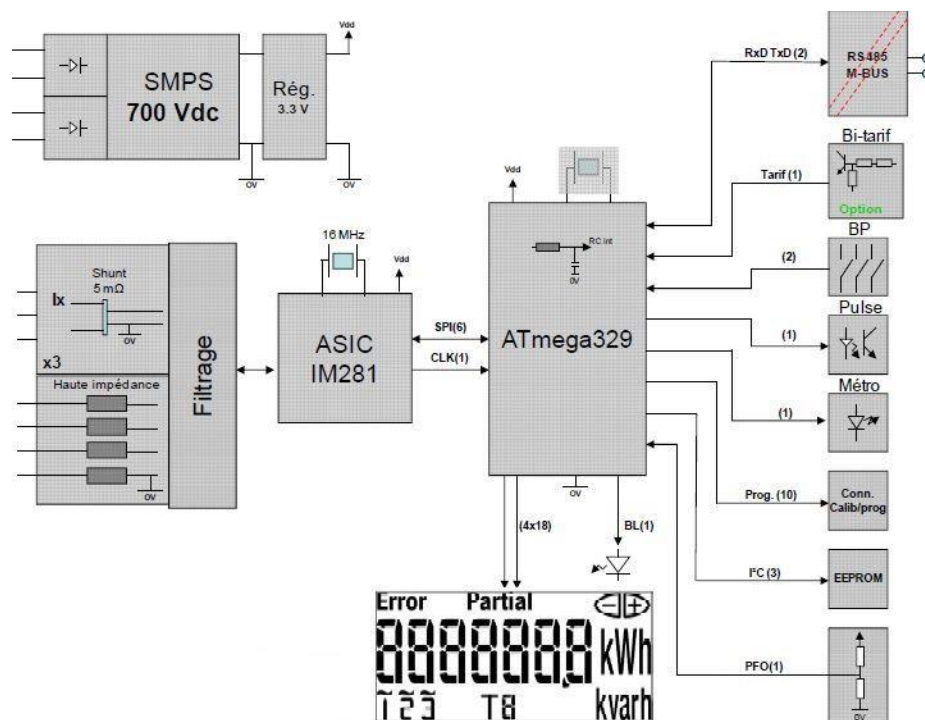


Figure 1 Block diagram DIRIS A14

2.3 Software / Firmware

The approved software version and the corresponding checksums are:

Type	FW-Number	Validity	Checksum	Date	Revision certificate ¹	Valid Y/N
Diris A14	1.01	Yes	0x3Eb0	27.06.2014	00	Y
Diris A14	1.02	Yes	0x3Eb0	12.11.2015	01	Y
Diris A14	1.0x ²	Yes	0xCFCA	15.09.2016	02	Y
Diris A14	1.0x ³	Yes	0x3Eb0	24.03.2016	03	Y

The firmware identification is imprinted on the name-plate and appears on the display during the start up.

No user settings are required. In case of software error, the message "CRC Err" appears on the display.

After the meter is launched on the market, the software can be identified (by means of its checksum) using a programming tool. The code that is read out must be identical to the code in the device used for the type examination.

The firmware can only be modified by breaking open the casing and therefore fulfils the requirements laid down under MID, Annex I, pt. 8.3.

2.4 Optional equipment and functions subjected to MID requirements

None

¹ Revision number of the type examination certificate

² The numbers of the revision after the main firmware version (1.0x) have no influence on the metrological results. The description of the software is described and archived on a document in a folder at METAS-Cert.

³ Additional Checksum for the panel mount version and DIN version.

3 Technical data

Connection types: Transformer connected meter
Energy type: Active energy
Direction for 3P+N, 3P: +A (Import), -A (Export)
Direction for P+N: +A (Import)
Class: C
Measurement system: 3P+N, 3P (for 3P, the voltage network must be balanced) and P+N (L1)
Currents (I_{st} , I_{min} , I_{tr} , I_{ref} , I_{max}) (0.005 A, 0.05 A, 0.25 A, 5 A, 6 A)
Transformation ratios 10/5 to 2500/5
Number of measurement systems: 3
Counter: LCD Display 7+0 digits (9'999'999 kWh)
Meter constant (LED) 10 000 imp/kWh (0.1 Wh/imp)
Min. number of impulses to reach repeatability: 10 (till I_{tr})
Min. measurement time to reach repeatability: 20 s (from I_n)
Max. cable cross-section (power inputs): 6 mm² (flexible) 10 mm² (rigid)
Operating temperature range: -10 °C...+55 °C
Storage temperature: -20 °C...+70 °C
Mechanical environment conditions: Class M1
Electromagnetic environment conditions: Class E2
Use for: Indoor applications
Assembly: On DIN rails or panel mount version
In order to comply with protection requirements, the meter should be integrated into casing with a protection class of IP 51 (as per IEC 60529) or higher.

3.1 Technical documents

All of the documents and drawings used for the conformity assessment have been submitted to METAS-Cert.

4 Integrated equipment and functions not subjected to MID requirements

Communication over RS485 MODBUS: None of the legal metrology data can be modified by means of the communications interface.

5 Conditions for the market introduction

The electricity meters must contain the following inscriptions:

- Brand or name of the manufacturer
- Serial number
- Type designation
- CE and metrology marking
- Type approval certificate number (CH-MI003-14025)
- No. of phases, no. of conductors; symbol for functional area
- Reference voltage and current, current measuring range, reference frequency
- Meter constant for the test LED and/or S0-output
- Operating temperature range
- Symbol for isolation according to protection class II
- Manufacturer symbol
- Displayed unit: kWh
- Meter accuracy class according to MID
- Connection diagram with a wiring diagram (energy measurement and transmitting contact S0)
- Software version number

The number of Type Examination Certificate on the descriptive plate can be written without the revision number as follows: **CH-MI003-14025**

6 Requirements for production, commissioning and utilization

6.1 Production requirements

The meter is calibrated in the production process using software (adjustment of calibration factors). Calibrations exclusively take place during the production of meters in the manufacturing plant.

6.1.1 Information accompanying the meter

The holder of the type approval certificate undertakes to include information and instructions for use (operating instructions) with their devices brought onto the market as this allows the users to connect the measurement device safely and according to the intended purpose.

6.2 Commissioning requirements

See the assembly and operating instructions

6.3 Requirements for use

See the assembly and operating instructions

7 Control of devices in operation

7.1 Test documents

See the assembly and operating instructions

Annex to the EU Type Examination Certificate No CH-MI003-14025-03

7.2 Testing equipment

Standard testing equipment.

7.3 Identification

The type designation should be taken from the type plate.

The software version used is printed on the side of the measurement device and appears on the display during the start up. The software can be identified by opening the casing and reading out by the programming interface of the processor.

7.4 Metrological test

The metrological tests must be carried out according to national applicable regulations.

8 Official stamps and conformity markings

8.1 Securing the meter casing

Once sealed (sealing and VOID labels) it is not possible to get inside the device without irreversibly damaging the casing components. In order to exclude repairs, neither the manufacturer nor a third party may place individual casing components onto the market.

8.2 Securing the terminals

The switch cabinet provided for the installation of the meter must be constructed in such a way that the front cover offers sufficient security for the relevant terminals. The meter terminals should also be fitted with a suitable cover and secured using sealing wire.

9 CE conformity mark and name-plates

The name-plates must be visible on the meters case with the listed information in chapter 5.

10 Certificate history

Version	Date	Description
CH-MI003-14025-00	4 July 2014	- First issue
CH-MI003-14025-01	16 December 2015	- New FW Version 1.02
CH-MI003-14025-02	15 September 2016	- New panel mount type of DIRIS A14; new FW-Version 1.0x
CH-MI003-14025-03	19 March 2018	- Additional Checksum for the panel mount version and DIN version.

11 Pictures and drawings

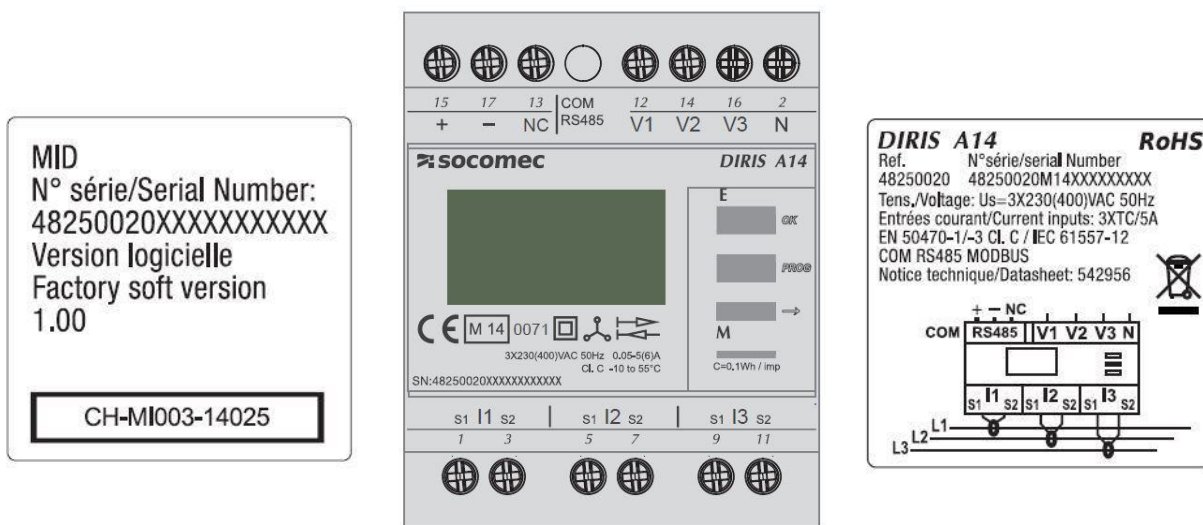


Figure 2 – Example of a type plate (Diris A14 - DIN version)

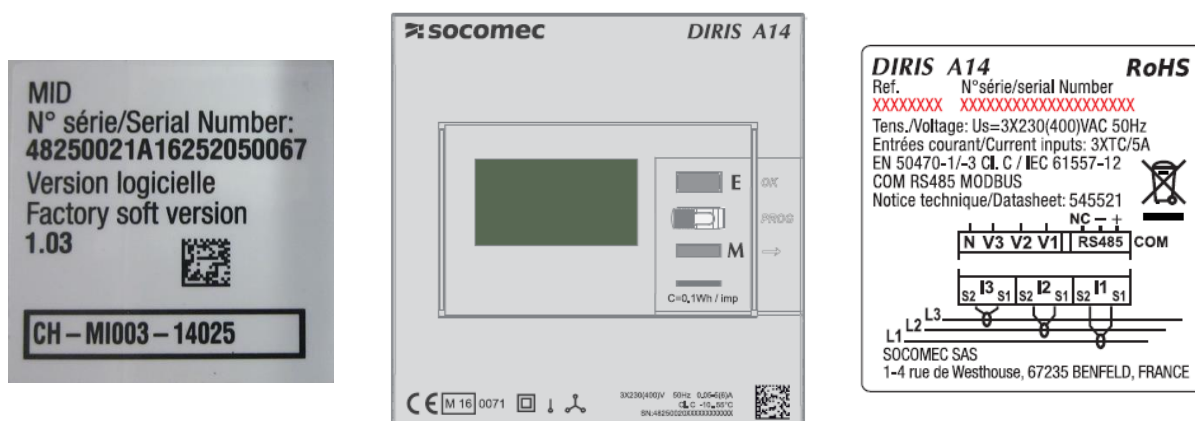
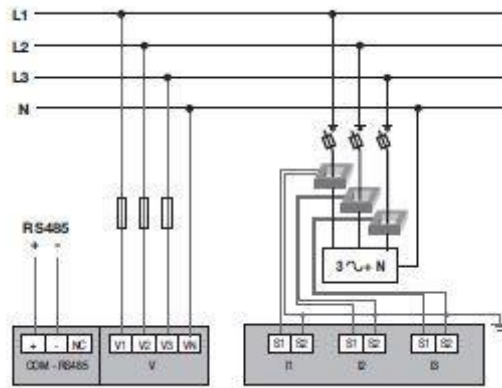


Figure 3 – Example of a type plate (Diris A14 - panel mount version)

3P+N – 3CT (4NBL)



3P – 3CT (3NBL)

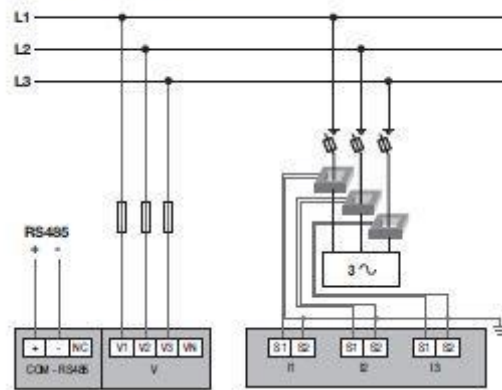


Figure 4 – Connection for Diris A14

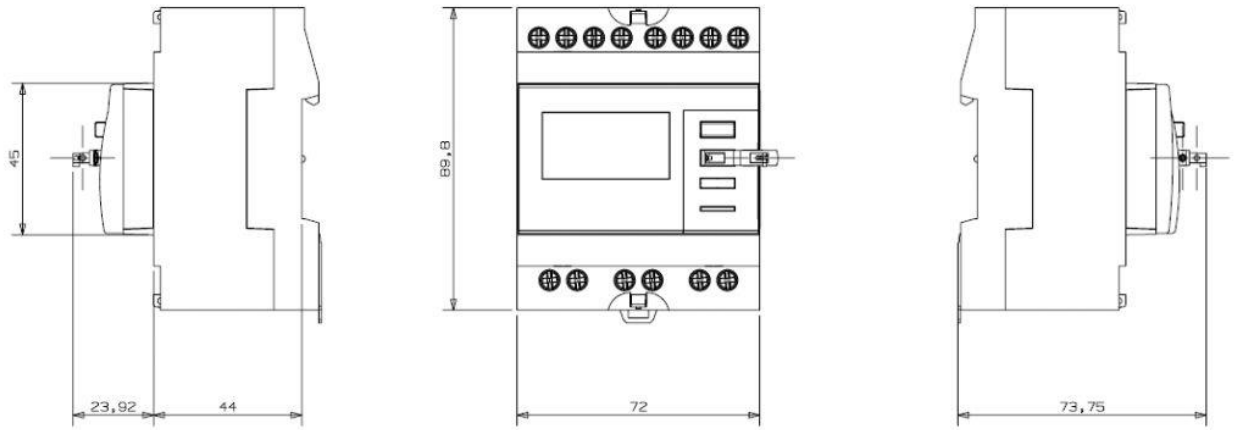


Figure 5 - Scale drawing (Diris A14 - DIN version)

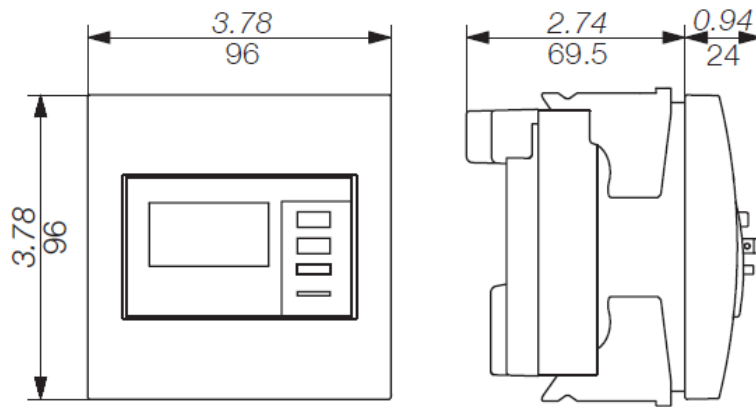


Figure 6 - Scale drawing (Diris A14 - panel mount version)

Annex to the EU Type Examination Certificate No CH-MI003-14025-03

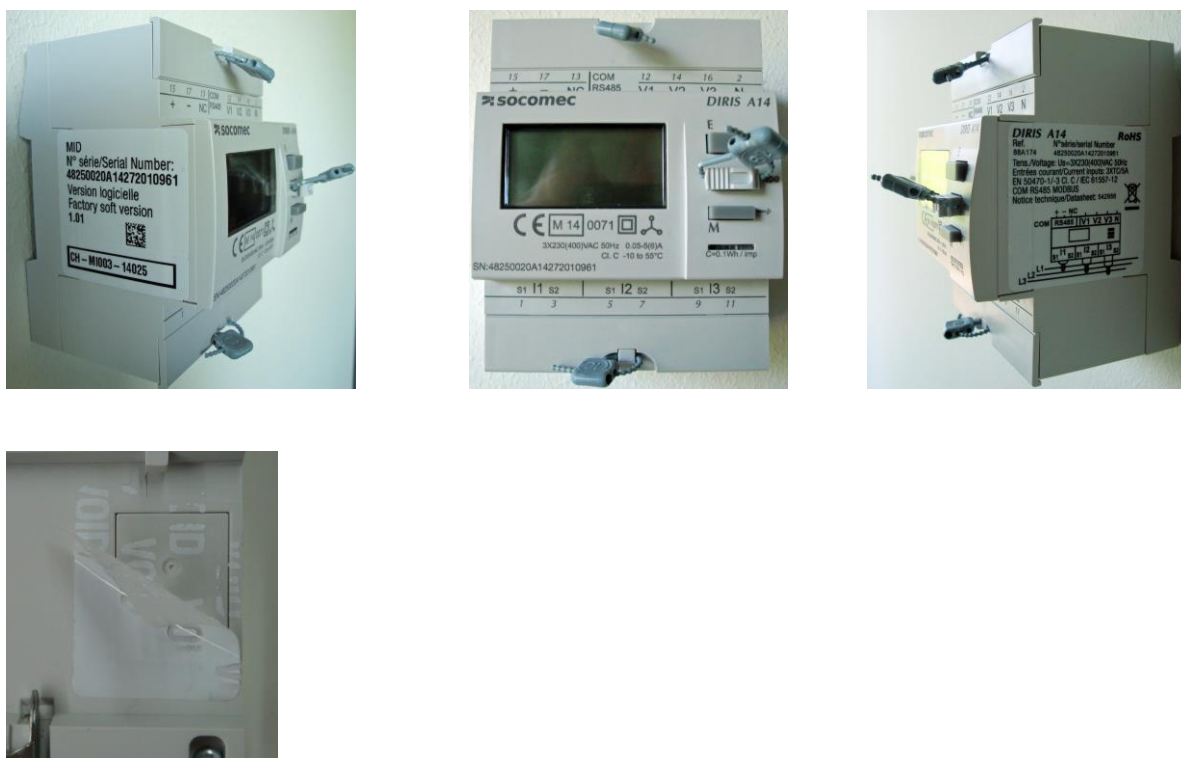


Figure 7 – sealing of the terminals and VOID sticker removed (Diris A14 - DIN version)

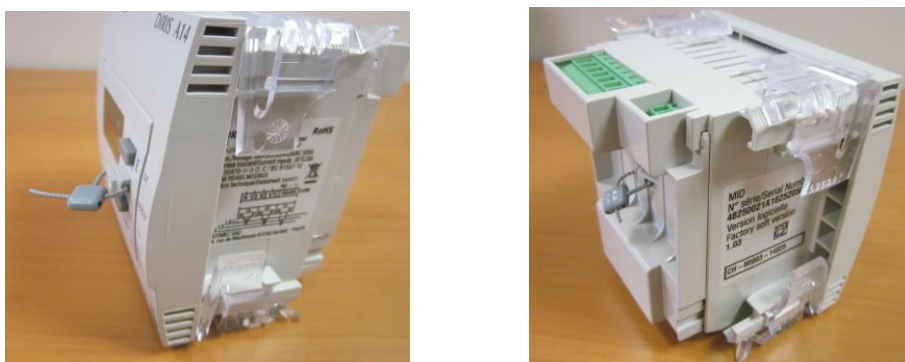


Figure 8 – sealing measures (Diris A14 - panel mount version)